



Response under 37 C.F.R. 1.116
- Expedited Examining Procedure -
Examining Group 1774

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Customer No. 01333

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Richard L. Parton, et al

ORGANIC ELEMENT FOR
ELECTROLUMINESCENT DEVICES

Serial No. 10/810,282

Filed 26 March 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Sir:

Group Art Unit: 1774

Examiner: Marie Rose Yamnitzky

I hereby certify that this correspondence is being
deposited today with the United States Postal
Service as first class mail in an envelope addressed
to Commissioner for Patents, P.O. Box 1450,
Alexandria, VA 22313-1450.

Deidra L. Mack

Deidra L. Mack

July 25, 2007

Date

DECLARATION PURSUANT TO 37 C.F.R. 1.131

The undersigned, Stephen P. Singer, of the county of Monroe,
State of New York, declares that:

He received the degree of B.S. in Chemistry from Clarkson College of
Technology in 1973 and the degree of Ph. D. in Organic Chemistry from the
Massachusetts Institute of Technology in 1977;

He has been employed in the research laboratories of Eastman Kodak
since 1978;

He is an Intellectual Property Coordinator in the area of Organic Light
Emitting Diode research for Eastman Kodak Company, and as such has access to
the laboratory notebooks and other research data obtained in the ordinary course
of business;

He is familiar with the content of the above-captioned application;

He confirms that none of the four inventors in the above-captioned
application is still employed at this time by the assignee of the present application,
Eastman Kodak Co;

With respect to both of the cited references:

(A) **US 2005/0064233** of Matsuura, cited by the Examiner under 35 USC 102(e) and under 35 USC 103(a) through 35 USC 102 (e) and having an effective US filing date of July 11, 2003, and

(B) **U.S. Patent Publication 2003/0129449**, published July 10, 2003 and counterpart EP 1298738 published April 2, 2003, cited by the Examiner under 35 USC 103(a) through 35 USC 102 (a),

Exhibits A1-A6 hereto are copies of the date redacted but otherwise unaltered notebook pages and test results' of inventor Richard Parton obtained in the ordinary course of the research business of Eastman Kodak Co., all dated prior to April 2, 2003, demonstrating that the invention was reduced to practice prior to the effective dates of the above references.

In particular:

Exhibit A1 shows the synthesis of Inv-7 in the top left of notebook page 16.

Exhibit A2 shows the same syntheses at notebook page 34, as identified in the test results.

Exhibit A3 shows the sample preparation and testing results for the data in Table 2 at page 46 wherein inventive Sample 7 is column F, inventive Sample 8 is Column D, and comparative Sample 9 is column A.

Exhibit A4 shows the synthesis of Inv-1 in the top right of page 19 of the notebook..

Exhibit A5 shows the synthesis of Inv-1 at page 25 of the notebook, as identified in the test results.

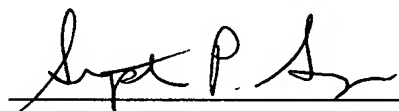
Exhibit A6 shows the data for Example 4 in Table 1 of the specification at page 45 of the specification.

The results in Exhibit A2 using Inv-7 show that the inventive initial luminescence of Samples 7 and 8 is far greater than for Sample 9 containing on TNB in the HTL. The results for Exhibit A4 using Inv-1 show superior results in columns E compared to column A containing only TNB in the HTL. It is noted that, for these samples, the sum of the two HTL layers always adds to 750 Angstroms or 75 nm. It is clear that there is an inadvertent decimal error in Table 1 samples 4 and 5 where the amount of HTL-2 should be 5.0 rather than 0.5. This does not affect the advantages shown for the invention.

The foregoing only represent a small portion of the data relating to the invention and the remaining data is not inconsistent with the data presented here.

The undersigned declares that all statements made herein of the undersigned's own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: July 24, 2007



Stephen P. Singer

CC19-14 MAN-051577-2
 2 C7H6N4 100% 35
 (b) C7H6N4 100% 35
 (a) C7H6N4 100% 35

C7H6N4 100% 35
 (b) C7H6N4 100% 35
 (a) C7H6N4 100% 35

CC19-14 MAN-051577-2
 (a) C7H6N4 100% 35
 (b) C7H6N4 100% 35
 (c) C7H6N4 100% 35
 (d) C7H6N4 100% 35
 (e) C7H6N4 100% 35

CC19-14 MAN-051577-2
 (a) C7H6N4 100% 35
 (b) C7H6N4 100% 35
 (c) C7H6N4 100% 35
 (d) C7H6N4 100% 35
 (e) C7H6N4 100% 35

CC19-14 MAN-051577-2
 (a) C7H6N4 100% 35
 (b) C7H6N4 100% 35
 (c) C7H6N4 100% 35
 (d) C7H6N4 100% 35
 (e) C7H6N4 100% 35

CC19-14 MAN-051577-2
 (a) C7H6N4 100% 35
 (b) C7H6N4 100% 35
 (c) C7H6N4 100% 35
 (d) C7H6N4 100% 35
 (e) C7H6N4 100% 35

CC19-14 MAN-051577-2
 (a) C7H6N4 100% 35
 (b) C7H6N4 100% 35
 (c) C7H6N4 100% 35
 (d) C7H6N4 100% 35
 (e) C7H6N4 100% 35

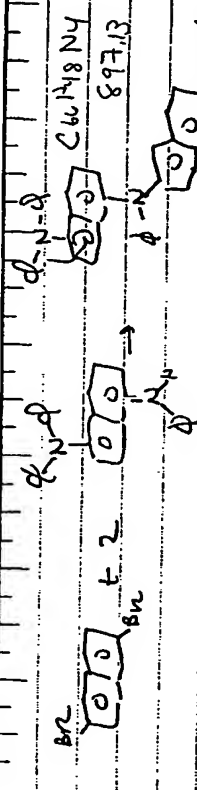
CC19-14 MAN-051577-2
 (a) C7H6N4 100% 35
 (b) C7H6N4 100% 35
 (c) C7H6N4 100% 35
 (d) C7H6N4 100% 35
 (e) C7H6N4 100% 35

OLED run#:	DP021108-1	
Completed date:		
Operator NB ref:		
Run request date:		
Originator:	Dick Parton / 7440	Call Kevin Donovan x20496 when complete
Originator NB ref:	CC119-34D (EB103F)	
Expermt Objective	Examine new HTM with TNB and DPQA	
sublimation temp.	sublimation temp 305-315 C at 0.6 torr	

Cell label (A-F):	A	B	C	D	E	F
Substrate:	Polytronics glass					
Anode:	ITO					
Pretreatment:	CFx	CFx	CFx	CFx	CFx	CFx
HTL material:	TNB					
Thickness (A)	750	700	550	200	50	0
Rate (A/s)		4	4	4	4	4
Rate high/low						
HTL material:	CC119-34D (EB103F)					
Thickness (A)	0	50	200	550	700	750
Rate (A/s)	4	4	4	4	4	4
Rate high/low						
Emitter host:	Alq					
Thickness (A)	375	375	375	375	375	375
Rate (A/s)						
Rate high/low						
EML dopant:	DPQA					
Dopant Volume %	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Thickness (A)	0	2.25	2.25	2.25	2.25	2.25
Rate (A/s)						
Rate high/low						
ETL	Alq					
Thickness (A)	375	375	375	375	375	375
Rate (A/s)						
Cathode: Mg/Ag						
Mg thickness (A)	2000	2000	2000	2000	2000	2000
Mg rate (A)	10	10	10	10	10	10
Ag thickness (A)	200	200	200	200	200	200
Ag rate (A)	1	1	1	1	1	1
Device data @ 20 mA	A1	B1	C1	D1	E1	F1
Voltage	7.4	7.0	7.7	9.7	10.9	7.9
W/A	0.042	0.049	0.048	0.054	0.048	0.052
Cd/A	7.27	8.44	8.36	9.39	8.31	9.06
CIEx	0.322	0.321	0.321	0.318	0.320	0.319
CIEx	0.642	0.644	0.644	0.647	0.645	0.646
L (cd/m²)	1453.0	1687.0	1671.0	1877.0	1662.0	1811.0
peak wavelength	528	528	528	528	528	528
70°C 20mA Fade Data (L_{initial} normalized to 1.0)						
T_{1/2} (hours)						
% remaining after fade	73.1%	69.1%	68.1%	65.3%	66.9%	70.8%
total fade time (hours)	335.0	335.0	335.0	335.0	335.0	335.0

Date: 05/16/2-8

Problem:



- a) LANCATOR (286) 0.5g
- b) BB 78.17-09 1.35g
- c) N105B4 (92) 30.4g
- d) PH (0412) 110.4g
- e) P4B4g 54g

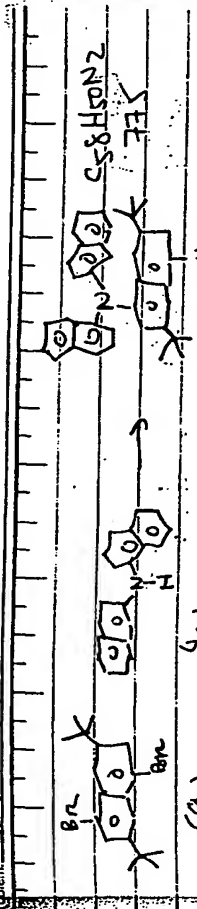
a-c in ~400ml of toluene in a 100 ml
Rb 5m flask with N₂ and condenser, many stirring
heat ~110°C - check TIC (111 kg spec) condenser
and 6 upper G have heated - remove
heat - let cool - filter off solid -
crystals solid with ~75% ETOH - heat
to reflux on remove heat - let stir ~2h
and stand overnight - collect solid - with 50%
1.4g

NPIC (w/ 90%) B (old 50) 7.1' - Tadd
in calc. assembly unmeasured sample with C119-19
- purify by using 0.6g - and mediate day solid 186 1.2g
- sublim 330° - some impurities, put in new cells
360-370° at 0.6 Torr - 660mg - 14 subline 365°C 0.6 Torr
- 585 mg - 186 - NPIC B (50 old) 9.105 (100% exclusion set
analysis in 9m mps - 5730 MP
NP 15234-000 NPIC old 50 9.5 (100%)
Signature: [Signature] mass 589.67

The foregoing disclosed to me on _____
Signature: [Signature] mass

Date: 9759-17

Problem: See 9759-17



- a) C119-14 398 (256) 0.75
- b) KAN 035761 (269) 1.0g
- c) 98 (100%) 12mg
- d) Nat 84 0.5g

a-d in a 100ml Rb-SN-flask with N₂ used,
condenser, 150g steam and ~400ml toluene
- heat at reflux - ~24h. TIC (516 kg) (111 kg spec) (444g)
- add 55mg of a - heat ~1h - add 78mg of
a - heat overnight - 14h - at 105°C
- add 50mg of a - heat 1hr - remove heat
- use filter - note drop - combine with ~75% ETOH
- collect solid - ~1.5g - combine with ~50ml
of heptane - heat to reflux and let cool with stirring
- 0.90g - 196

Sublim 0.6 Torr 330°C - 300mg
NPIC B (old 50) 5.1' (12) 8.84' (982) 9.6' (16)
from calc. assembly treated - 186, then 172 C₆H₄N₂ / ETOH, 186
solid 186, 75% ETOH, combine solid fraction and add by collect
combine with 50% ETOH purified solid from above - 1.9g, 400mg
solid at 238° - ~400mg, 196, 14 subline - 270-275°C - 300mg
5730 MP (old 50) 9.5 (100%)
Signature: [Signature] mass 589.67

The foregoing disclosed to me on _____
Signature: [Signature] mass

OLED run#:	DP021010-2
Completed date:	
Operator NB ref:	
Run request date:	
Originator:	Dick Parton / 71440
Originator NB ref:	CC119-25c
Expermt Objective	Examine new HTM with TNB and DPQA
sublimation temp.	sublimation temp 260 °C at 0.6 torr

Call Kevin Donovan x20496 when complete

Cell label (A-F):	A	B	C	D	E	F
Substrate:	Polytronics glass					
Anode:	ITO					
Pretreatment:	CFx	CFx	CFx	CFx	CFx	CFx
HTL material:	KAN 051823, CC119-25c					
Thickness (Å)	0	50	200	550	700	750
Rate (Å/s)		4	4	4	4	4
Rate high/low						
HTL material:	TNB					
Thickness (Å)	750	700	550	200	50	0
Rate (Å/s)	4					
Emitter host:	Alq					
Thickness (Å)	375	375	375	375	375	375
Rate (Å/s)						
Rate high/low						
EML green dopant:	DPQA					
Dopant Volume %	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Thickness (Å)	2.25	2.25	2.25	2.25	2.25	2.25
Rate (Å/s)						
Rate high/low						
ETL	Alq					
Thickness (Å)	375	375	375	375	375	375
Rate (Å/s)	/					
Cathode:	Mg/Ag					
Mg thickness (Å)	2000	2000	2000	2000	2000	2000
Mg rate (Å/s)	10	10	10	10	10	10
Ag thickness (Å)	200	200	200	200	200	200
Ag rate (Å/s)	1	1	1	1	1	1
Device data @ 20 mA	A1	B1	C1	D1	E1	F1
Voltage	10.8	8.4	11.7	16.6	16.8	16.0
W/A	0.062	0.061	0.062	0.071	0.072	0.071
Cd/A	10.82	10.58	10.95	12.54	12.70	12.48
CIE _x	0.314	0.314	0.315	0.318	0.319	0.316
CIE _y	0.650	0.650	0.650	0.649	0.648	0.651
L (cd/m ²)	2163.0	2116.0	2190.0	2507.0	2539.0	2495.0
peak wavelength	528	528	528	528	528	528
70°C 20mA Fade Data (L _{initial} normalized to 1.0)						
T _{1/2} (hours)	NOTE: some voltages were too high for accurate 70C fade testing, refer to RT fade test					
% remaining after fade	76.4%	75.8%	76.5%	76.0%	66.3%	68.0%
total fade time (hours)	215.4	215.4	215.4	215.3	215.3	215.3

Device data @ 20 mA	A2	B2	C2	D2	E2	F2
Room Temp 20mA Fade Data (L _{initial} normalized to 1.0)						
T _{1/2} (hours)						
% remaining after fade	87.7%	84.3%	88.6%	87.3%	84.5%	84.7%
total fade time (hours)	305.9	305.9	305.9	305.9	305.9	305.9